

QUALITY, INNOVATION AND PERFORMANCE: AN EXPLORATORY STUDY

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ABSTRACT

The relationship between total quality management and innovation appears contradictory and complex. Literature suggests that conflicting arguments exist and while for some researchers, total quality management practices do not directly improve innovation, for others, there is a positive relationship between management practices of quality and innovation. Similarly, it remains to explain the influence of total quality management and innovation in the organizational performance.

In this research, our goal is to understand the synergistic relationships between the three variables: total quality management, organizational innovation and organizational performance. This study is based on two exploratory interviews in two ISO 9000 certified SMEs (Small and Medium sized Enterprises): a Logistics Company and a Fuel Company (household fuel and equipment installation and maintenance).

Based on the analysis of these interviews we present a set of propositions about the relationship between those variables. These propositions will support the formulation of hypotheses for future scientific studies in this area. Results of this research can be of high utility in understanding how the variables interact and their impact in different types of organizations.

INTRODUCTION

During the last two decades, the deregulation and globalization of markets, as well as internationalization of service firms, originated severe competition between firms. The concepts of quality and innovation have become guiding elements for what, in the business world, is known as management excellence. They constitute the centre of strategic management for formulating and implementing objectives, policies and performance. TQM and innovation management are elements that can increase the competitive advantage of firms (Garrido et al. 2007). The organizations have adopted TQM (Total Quality Management) as a strategy to respond to customer requirements (Han et al. 2007). TQM can be understood as a management philosophy, whose main concern is to meet the needs and expectations of customers through the integration of all

functions and processes of the organization to achieve continuous improvement of quality of goods and services (Fuentes et al. 2006; Han et al. 2007; Lenka and Sweat 2008).

Despite the incorporation of innovation into management excellence models based on TQM and, although, consensus states that innovation offers a major source of sustained competitive advantage, research into the relationship between TQM and innovation performance remains scarce (Prajogo and Sohal 2003, 2004; Singh and Smith 2003). In this sense, it is of major relevance to analyse the relationship between TQM and innovation of firms in general and of small firms in particular.

Small and medium enterprises are very important for economic growth in all countries. They contribute with job opportunities and act as supplier of goods and services to large organizations. SME's are defined by a number of factors and criteria, such as location, size, age, structure, organization, number of employees, sales volume and worth of assets (Rahman 2001).

The purpose of the current research, an exploratory study, is to understand the relationship between total quality management, innovation and organizational performance in small business. Specifically, the paper presents a set of propositions about the relations between them. It is expected that the results of this research may be helpful in understanding how the three variables interact and their impact on different types of service organizations.

After introducing the subject topic and having highlighted the main objective of this article, here we present a revision of the literature, the methodology used throughout the study, the achieved results, ending with the findings and limitations of the study.

LITERATURE REVIEW

Total Quality Management

The Total Quality Management (TQM) is a systematic approach that considers all the interactions between the various elements of the organization. TQM comprises a group of ideas and techniques for enhancing competitive performance by improving the quality of products and processes (Grant et al. 1994). TQM focuses on improving organizational effectiveness and responsiveness to customer needs. The goals of TQM are the organizational distinction and the customer satisfaction (Han et al. 2007). From what

was exposed it can be said that the strategy of total quality management is based on the global involvement of all collaborators who are encouraged to be more flexible, interactive and participatory in organizational activities. Proponents of ISO 9000 argue that certification is the first step towards total quality, being an important contribution towards TQM (Anderson et al. 1999; Gotzamani et al. 2006). The adoption of ISO 9000 is a way of achieving competitive advantage through quality management (Anderson et al. 1999).

Innovation

Innovation can not be seen as something periodical that happens by accident or something that results from the action of an individual agent. Innovation is related with the adoption and application of new knowledge and practices, including the ability of an organization to adopt or create new ideas and implement these ideas in developing new products, services, and working processes and procedures and improving those already established (Bates and Khasawneh 2005). Innovation is considered an intangible resource. Silva et al. (2007) suggested that innovation is seen as the result of an interactive and nonlinear process between the firm and the environment. According to the Oslo Manual (OCDE, 2005), innovation in services is organized in a less formal way, it is less technological and is more incremental in nature.

Performance

In the context of global and highly competitive market, the evaluation of the performance has become an important component of the development strategies of organizations. Performance measurement can be defined as the process of quantifying the efficiency and effectiveness of production systems (Singh and Garg 2008). Thus, performance may relate to the individual, group, organization, organizational segment, function, activity, market segment, etc. In literature one can find various methodologies to measure performance, including qualitative and quantitative measures. These latter are of financial or non-financial nature.

According to Franco et al. (2006) strategic performance is generic, synthetic, and generally covers long periods (usually five years) and the whole organization; tactical performance is less generic and focuses on one area or on a specific organizational segment and does not encompass long periods (usually 1 to 3 years); operational performance is more analytical, it has a short term time reference horizon (up to one year), it focuses, for instance, on the activities, processes and operations.

Newbert (2008) cites several authors and typifies the performance measures into 3 types that are regularly used in the strategic literature: objective financial performance, subjective financial performance and subjective nonfinancial performance.

Matsuno, Mentzer and Özsoner (2002) proposed as variables: market share, percentage of new products sales on total sales and return of the investment. Rodrigues (2004) measured the performance with three dimensions: economic results, successful new products and relative market share.

Han et al. (2007) used two indicators, profit and market share, measured in the course of various items. Metts (2007) measured the performance through three distinct dimensions: financial performance (market share, redraft, growth rate) operational performance (product quality, delivery, ease of product change) and organizational performance (customer satisfaction, collaborators satisfaction).

For the above we can say that there are different ways of measuring the performance. Each researcher uses the most appropriate measures of performance for the study that he undergoes. In this study, the measurement, performance is measured through the adoption of underlying concepts of the excellence criteria of EFQM (European Foundation Quality Management).

RELATIONSHIP BETWEEN TQM, INNOVATION AND PERFORMANCE

TQM and Performance

TQM and the performance of the organization have been under study by several investigators. One of TQM's greatest benefits is its emphasis on continuous improvement of business processes. The aim of TQM is to improve competitiveness, effectiveness and flexibility (Evans and Lindsay 2004). Although some authors recognize that no robust and consolidated evidence concerning the positive relationship between TQM and performance exists, there is consensus regarding the empirical validity of a positive effect of TQM on operational-type performance, such as productivity, flexibility, on-time delivery of goods and services, quality and customer satisfaction in general (Kaynak 2003). Agus and Abdullah (2000) and Hanet et al. (2007) consider that practices of TQM have not directly improved the performance of the organization. However, according to many other authors (Ahire et al. 1996; Prajogo e Sohal 2003, 2004; Costa and Lorente 2004; Pinho 2007; Beck and Walgenbach 2009) the implementation of TQM practices can benefit many aspects of the organization and result in an improved performance. The empirical studies assessing the relationship between TQM and organizational performance have indicated strong and positive results.

TQM and Innovation

There are no consistent findings concerning the relationship between the adoption of principles of TQM and innovation. In some investigations the management for the total quality sustains innovation and there is a positive relationship between management practices of total quality and innovation (Zaire 1997; Prajogo e Sohal 2003, 2004). However, in other investigations, TQM can prevent innovation. Pinho (2007), in a study of Portuguese small and medium sized enterprises (SME's) did not confirm a positive relationship between TQM and innovation. Abrunhosa and Sá (2008), in a study regarding the relationship between principles of TQM and innovation, found that not all principles of total quality play a major role on innovation. Vijande and González (2008), in an investigation that involved 93 SMEs from the manufacturing and service sectors of the autonomous region of Asturias, concluded that TQM itself is able to promote innovation at the management

level. However, regarding the TQM effects on products and processes innovation, it is mediated by the company's culture favorable to innovation.

Innovation and Performance

There is a general agreement that entrepreneurial orientation, of which innovation is an integral part, influences the performance of the organizations (Miller 1983; Covin and Slevin 1989, Barrett and Weinstein 1998; Ferreira 2003; Rodrigues 2004), and the entrepreneurial companies will have better performances and better levels of innovative products (Miller and Friesen 1982). Barrett and Weinstein (1998) concluded that the relationship between entrepreneurial orientation and performance is direct and positive. According Damanpour (1996), innovation includes activities such as improving products, processes or procedures that aim to increase the value and performance of products, processes or procedures. Pinho (2007) argued that innovation in organizational administrative processes, leading edge technologies and ability to produce differentiated products contribute to improving the firm's performance.

METHODOLOGY

In such studies, in spite its presence, theory is not necessarily a starting point. The theoretical assumptions are being presented as the research evolves. The selection of cases is made on the basis of theoretical criteria and occurs throughout the study (Brannen 2005).

The research work was developed through the study of two ISO 9000 certified organizations. Two separate interviews were conducted with the senior manager and quality coordinator of each firm. Each interview typically lasted for two hours.

ISO certification guarantees, to a certain extent, that organizations have knowledge and interest on total quality management practices. It also guarantees familiarity with the quality concepts used in the research and particularly useful in interviews.

In the qualitative approach researchers are required to show flexibility and engagement. This is particularly evident in interviews in which the role of the researcher, in personal terms, is unparalleled in all social research (Easterby-Smith, Thorpe and Jackson, 2008). For this reason, it was especially important to develop an interview guide composed of three parts: TQM; Innovation; Performance. In each part it was intended to assess organization's evolution since the beginning of the ISO 9000 certification process, at the level of three considered dimensions.

TQM evolution was assessed through a set of 24 questions based on the "enablers" criteria of the EFQM (European Foundation Quality Management) excellence model. The EFQM excellence model is widely recognized as a powerful tool for self assessment of organizations and has been internationally used as a model by total quality management (Pires, 2006). The enablers criteria (leadership; people; strategy; partnerships and resources; processes, products and services) represent what the organization does, therefore it was considered appropriate to assess the organization's

evolution concerning the total quality management. The evolution of the level of the organization's performance was similarly evaluated through the criteria results of the EFQM excellence model. The criteria results (customer results; people results; society results; key results) represent what the organization achieves. The evaluation was performed by 20 questions. Evolution of Innovation was assessed using five questions related to change and evolution demonstrated at the level of innovation, based on the scale developed by Covin and Slevin (1989).

RESULTS

The interviews conducted at the Fuel Company and the Logistics Company allowed for the registering of a set of statements on which the five propositions presented here, were based.

Relationship between TQM and Performance

The senior manager of the Logistics Company pointed out as the main difficulties of implementation of the quality management system the involvement of individuals and departments within the organization. The senior manager has stated the following: "the main difficulty that we have had is related to the involvement of all departments in the implementation process system. We have had some employees who were hard to convince. However, they seem now very interested and satisfied". For its part, the quality coordinator at the Logistics Company reported that the main difficulty was to involve the top management: "The difficulty mainly lies in the poor involvement of the top management, CEOs do not care much about these issues".

The senior manager of the Fuel Company stated that the implementation process of quality management system was a success. He valued the speed of the implementation process, the strong involvement of all employees and recognized major changes in the level of procedures. The senior manager stated: "Total quality management helped in creating procedures and processes. It has forced the organization to be more effective and efficient and was relatively fast". He even added: "Concerning customers, there is a relevant relationship between total quality management and their satisfaction. Now, customers seem more satisfied and believe more in ourselves".

The quality coordinator at the Fuel Company has stated that: "the implementation of total quality in our organization has enabled think organization in terms of management according to objectives and continuous improvement. The implementation of the quality management system can continuously improve the organization. Now we have a lot of concern in monitoring the company's quality objectives".

The senior management of Fuel Company indicated that despite some initial resistance, people have realized the importance of quality management system implementation and participated actively. He said: "After some initial resistance, there was a voluntary participation in the activities required to implement the quality management system such as elaboration of documents and internal auditors. People seem now more satisfied ". The Fuel Company quality coordinator stated: "The monitoring of processes enables us

to attack certain situations we want improve and where we have some problems. For us the system is an important management tool”.

All four respondents referred important benefits as result of the implementation of quality management system. The senior manager of Logistic Company stated: "the organized image of the organization that can be passed to the client and the clear and objective definition of vision, mission and values of the organization are, for me, the main advantages of the quality system". The quality coordinator of Logistic Company ruled as follows: "we have now an important management tool that allows evaluating the performance of the organization and enables the implementation of best practices in monitoring the operations. The senior manager of Fuel Company stated: "With the implementation and certification of quality management system, we can say that the organization meets international standards". The quality coordinator of Fuel Company ruled as follows: "Now we can demonstrate for our customers that we have quality in our organization”.

The interviews suggest that the total quality management has influence on organizational performance. According to what was said by respondents the implementation of quality management system has enabled an improvement in results at the organization's processes. Thus, there might be a possible relationship between total quality management and results at the level of the organization's processes.

PROPOSITION 1: The total quality management can positively influence the level of the operating results of the enterprise

Despite the fact that collaborators did not seem very convinced when implementation of quality management system starts, after some time, they are completely surrendered to TQM. So, a second proposition can be stated:

PROPOSITION 2: Total quality management can positively influence the level of the “people results” of the enterprise

The senior manager of Logistic Company stated that: "I must emphasize improvement at the level of economic results such as profitability and sales volume and, above all, at the productive efficiency and organizational level". The opinion of the senior manager of Fuel Company is more or less the same: "I think we have good results from quality management. Quality certification was announced in local media and that was important to have more customers". From what was exposed, the third proposition can be proposed:

PROPOSITION 3: The total quality management can positively influence the level of the financial results of the enterprise.

Relationship between TQM and Innovation

The interview with the fuel company's manager suggests that the total quality management provides continuous improvement of procedures and monitoring of quality objectives. He said the following: "I can say that the quality management system and its network of processes have promoted a spirit of change and innovation in the organization. The network allowed a different view and understanding of some problems that existed. We developed a set of monitoring indicators of activities and requirements and strategies are defined based on outcome indicators".

In the logistics company, the senior manager reported the following: "given the business and market nature where the organization operates, the risk is explored through small but safe steps, reducing the probability of wrong decisions. The system started providing indicators to take the risk with greater security". About this, but in a more operational context, the quality coordinator said the following: "Despite the value of the product, the brand, the fact that the organization system is already well known, there has been a predominant focus on research and development issues. Total quality management is a powerful task for this”.

According to what was mentioned above, the implementation of quality system has implications at the level of innovation. Thus, the fourth proposition emerges:

PROPOSITION 4: The total quality management can positively influence the level of organizational innovation of the enterprise

Relationship between Innovation and Performance

In interview the senior manager of Fuel Company stated that the changes in the process of delivery of fuel caused a led to improved outcomes in terms of customers. He reported that: "The service delivery of fuel has significantly improved. With the changes made at the level of procedures, it is easier to provide for the delivery. The delays were reduced and customers are more satisfied. I think it is a result of operational changes made". About openness towards innovation, the coordinator of quality said: "the analysis of indicators and our approach to innovation allowed examining trends, non-conformities and changes. The results have been continuously improved. We think that it is the reflection of the improvements that we introduce in form to work”.

According to the quality coordinator of Logistic Company, “the firm has noted a strong evolution at the level of the customer's satisfaction either by the drop of the number of complaints, or by the reduction of the reaction time (deadlines). These improvements may be a reflection of our careful posture to continuous improvement. We have been introducing changes and improvements in the procedures”. Due to what was stated, the fifth proposition arises where a relationship between organizational innovation and its operational performance is expected.

PROPOSITION 5: The organizational innovation can positively influence the operational performance of the enterprise.

FINAL CONSIDERATIONS

This study contributes to the existing literature on relationship between the following variables: total quality management, innovation and performance. First, it identifies significant research issues and addresses previously unanswered questions. Second, it investigates the role of TQM in supporting innovation and organizational performance and the role of innovation in organizational performance in the context of Portuguese small and medium sized enterprises.

Based on literature review, it is noted that research results have not arrived at common conclusions. There are, however, a large number of researchers that identify the existence of a positive relationship between TQM and

organization's performance. According to the interviews that took place in two organizations, this study concluded that TQM has an influence on the operational results and collaborators' performance and TQM also enabled the improvement at the level of the financial results. It is reasonable to conclude that the TQM positively influences the organizations' performance.

About the relationship between TQM and organizational innovation, the previous investigations did not show agreement in the results. In this exploratory research, it was noticed that in both organizations, the implementation of TQM practices allowed for the improvement at the level of the innovation attitude. So, it can be said that TQM positively influences innovation.

A large number of researchers found out that the innovation contribute to improving the firm's performance. In both firms, the exploratory interviews suggest that improvement in performance results occurs as a consequence of innovation posture in processes and procedures. Continuous improvement of the quality management system had positive consequences in the operational performance results. So, a positive relationship between innovation and the operational performance of the firms is confirmed.

Our study has several limitations. First, it focuses in only on two small and medium sized enterprises. It is unclear to what extend our results can be generalized. Second, it relies on perceptual data from senior manager and quality coordinator and might not give a complete and real picture of the organization. Third, it focuses on Portuguese firms. Given the internationalization of the standard ISO 9000 and the resulting quality management, it would be interesting to replicate the study in different regions and services.

For these reasons the establishment of a new exploratory study covering more and different organizations is suggested. In a second step, the propositions presented in this study and others must be empirically tested.

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